WHAT IS CLAIMED IS:

1. A computerized method of industrializing a designed part, the method comprising:
   selecting a parting surface that divides the designed part into a first side and a second side,
      wherein the designed part comprises a functional specification;
   selecting a draft angle; and
   computing a change in the first side and the second side using the selected draft angle,
      wherein the functional specification is maintained and the first side and second side meet on the parting surface.

2. The method of claim 1 additionally comprising selecting a face of the designed part, wherein computing the industrialized designed part includes using the selected face.

3. The method of claim 2 additionally comprising:
   selecting a pulling direction for the first side;
   wherein the selected face is parallel to the pulling direction for the first side.

4. The method of claim 3 wherein computing an industrialized designed part additionally comprises using a plurality of faces adjacent to the selected face.

5. The method of claim 4 wherein the plurality of faces are bounded by a sharp edge.

6. The method of claim 1 additionally comprising displaying the computed industrialized designed part.

7. The method of claim 1 additionally comprising selecting between an optimal blend draft method and a driving/driven blend draft method.

8. The method of claim 7, wherein computation comprises using the optimal blend draft method.

9. The method of claim 7, wherein computation comprises using the driving/driven blend draft method.

10. The method of claim 8 additionally comprising selecting a corner radius for smoothing a connection between two adjacent faces, wherein computing the industrialized designed part includes using the corner radius.

11. The method of claim 10 wherein transitions between a face on each side comprises using a blending equation and the corner radius.

12. The method of claim 11 wherein the computation additionally comprises automatically switching a driving side to minimize material added, wherein the driving side is selected from the group consisting of the first side and the second side.

13. The method of claim 8 wherein the draft angle comprises a first minimum draft angle for the first side and a second minimum draft angle for the second side.

14. The method of claim 8, wherein the optimal blend draft method comprises a method wherein the minimum amount of surface area is added to the part during computation and supports a transition between a face on the first side and a face on the second side.

15. The method of claim 9 wherein the draft angle comprises a nominal draft angle.

16. The method of claim 9, wherein the nominal draft angle is guaranteed.

17. The method of claim 9 additionally comprising selecting a driving side.

18. The method of claim 9 additionally comprising:
displaying the computed designed part; and
recomputing the designed part based on new selections.

19. The method of claim 1 wherein the functional specification comprises a neutral element of the designed part, wherein the neutral element remains unchanged during the computation; wherein the computation further comprises calculating the shape with the neutral element using a formula with the parting surface, the draft angle, an equation for a cone on the side of the neutral element, an equation for a derivative of the cone, the cone's half angle, and a space variable.

20. The method of claim 1 wherein the functional specification comprises a reflective element of the designed part, wherein the reflective element is tangent to the draft. surface; wherein the computation further comprises calculating the shape with the reflective element using a formula with the parting surface, the draft angle, an equation for a cone on the side of the reflective element, an equation for a derivative of the cone, and the reflect element.

21. The method of claim 1, wherein computation further comprises using a blending equation comprising:

$$B(r_0, a_0, b_0, a, b, u, v, \ldots) = \sqrt{r_0^2 + \|S(u,v) - P(.)\|^2}\sqrt{r_0^2 + \|S(u,v) - Q(.)\|^2}(a - a_0)(b - b_0) - r_0^2,$$

wherein $S(u,v)$ represents a parting surface;

r_0 represents a corner radius;

$P(.)$ represents a first curve or surface;

$Q(.)$ represents a second curve or surface;

a_0 represents a minimum first draft angle;

b_0 represents a minimum second draft angle;

a represents a first draft angle; and

b represents a second draft angle.

22. The method of claim 1, wherein computation further comprises using a blending equation comprising:

$B(r_0, a_0, b_0, a, b, u, v, ...) = a - a_0$,

wherein a_0 represents a minimum first draft angle and a represents a first draft angle.

23. The method of claim 1, wherein computation further comprises using a blending equation comprising:

$B(r_0, a_0, b_0, a, b, u, v, ...) = b - b_0$,

wherein b_0 represents a minimum second draft angle and b represents a second draft angle.

24. The method of claim 1, wherein computing the industrialized designed part comprises calculating a solution to an equation using a method selected from the list consisting of marching methods and numerical continuation.

25. The method of claim 1 wherein the parting surface is tangent continuous.

26. A computerized method of industrializing a designed part, the method comprising:

selecting a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;

selecting a pulling direction for the first side;

selecting a face of the designed part to add the draft angle;

selecting a corner radius for the designed part for a first side;

selecting a draft angle; and

computing a change in the first side and the second side using the selected draft angle, selected pulling direction, and selected face, wherein a transition is implemented between the first side and second side using the selected corner radius, the functional specification is maintained, and the first side and second side meet on the parting surface.

27. A computerized method of industrializing a designed part, the method comprising:

selecting a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;

selecting a pulling direction for the first side;

selecting a face of the designed part to add the draft angle;

selecting a draft angle; and

computing a change in the first side and the second side using the selected draft angle, selected pulling direction, and selected face, wherein a transition is implemented between the first side and the second side using a blending equation, the functional specification is maintained, and the first side and second side meet on the parting surface.

28. A computer system for industrializing a designed part, the system comprising:

a computer, wherein the computer comprises a memory and a processor; and

executable software residing in the computer memory wherein the software is operative with the processor to:

select a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;

select a draft angle; and

compute a change in the first side and the second side using the selected draft angle, wherein the functional specification is maintained, and the first side and second side meet on the parting surface.

29. The computer system of claim 28 wherein the software is operative with the processor to:

select a pulling direction for the first side;

select a face of the designed part to add the draft angle; and

select a corner radius for the designed part for a first side;

wherein the computation additionally comprises using the selected pulling direction, and selected face, wherein a transition between the first side and the second side is implemented using the corner radius.

30. The computer system of claim 28 wherein the software is operative with the processor to:
select a pulling direction for the first side; and
select a face of the designed part to add the draft angle;
wherein the computation additionally comprises using selected pulling direction, and the selected face, wherein a transition between the first side the second side is implemented using a blending equation.

31. A computer data signal embodied in a digital data stream for industrializing a designed part, the system comprising the steps of:
selecting a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;
selecting a draft angle; and
computing a change in the first side and the second side using the selected draft angle, wherein the functional specification is maintained and the first side and second side meet on the parting surface.

32. The computer data signal of claim 31 additionally comprising:
selecting a pulling direction for the first side;
selecting a face of the designed part to add the draft angle;
selecting a corner radius for the designed part for a first side;
wherein the computation additionally comprises using the selected pulling direction, and selected face, wherein a transition between the first side and the second side is implemented using the selected corner radius.

33. The computer data signal of claim 31 additionally comprising:
selecting a pulling direction for the first side; and
selecting a face of the designed part to add the draft angle;
wherein computing additionally comprises using selected pulling direction, and selected face, selected geometrical constraints, and a transition between a face on the first side and a face on the second side is implemented using a blending equation.

34. A computerized method of industrializing a designed part, the method comprising:
selecting a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;
selecting a draft angle; and
computation means for adding the draft angle to the designed part while maintaining the functional constraints, the first side and second side meet on the parting surface, a minimum amount of material is added to the designed part, and no sharp edges are generated on the designed part.

35. A data storage apparatus storing instructions to configure a computer to:
select a parting surface that divides the designed part into a first side and a second side, wherein the designed part comprises a functional specification;
select a draft angle; and
compute a change in the first side and the second side using the selected draft angle, wherein the functional specification is maintained, and the first side and second side meet on the parting surface.

36. The apparatus of claim 35 wherein the apparatus additionally stores instructions to configure a computer to:
select a pulling direction for the first side;
select a face of the designed part to add the draft angle; and
select a corner radius for the designed part for a first side;
wherein the computation additionally comprises using the selected pulling direction, and selected face, wherein a transition between the first side and the second side is implemented using the corner radius.

37. The apparatus of claim 35 wherein the apparatus additionally stores instructions to configure a computer to:select a pulling direction for the first side; and
select a face of the designed part to add the draft angle;
wherein the computation additionally comprises using selected pulling direction, and the selected face, wherein a transition between the first side the second side is implemented using a blending equation.